

SEVERE HAILSTORM AT RAPID CITY, S. DAK., AND VICINITY JULY 18, 1924

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[Weather Bureau, Rapid City, S. Dak., July, 1924]

The most severe hailstorm of record at the local Weather Bureau occurred in Rapid City and vicinity during the early afternoon of July 18, 1924. This hailstorm was the most severe and lasted the longest of any the writer has ever experienced. Hail began at 1:19 p. m. accompanied by rain, driven by a high wind that reached an extreme velocity of 52 miles an hour at 1:28 p. m., the storm approaching from the northwest. At 1:32 p. m. the wind shifted to the east for a few minutes, then to the northeast at 1:45 p. m., diminishing in velocity with the shifting of the wind.

The hail barrage lasted 36 minutes and was accompanied by excessive precipitation that continued throughout the duration of the storm, which ended at 1:55 p. m., 1.49 inches of precipitation occurring. One period of five minutes gave 0.40 inch. After the storm the rain-gage receiver was found to be half full of hail and when melted measured 0.27 inch. It is estimated that 4 inches of hail fell during the storm. Three inches remained on the roof of the Federal building after the storm was over. During the progress of the storm the roaring noise made by the storm was deafening. The hailstones ranged in size from that of peas to that of small hen eggs. One stone picked up by the writer measured $1\frac{1}{2}$ inches in diameter. Some reports are to the effect that much larger hailstones were found. Practically all the larger hailstones examined had a soft center. Six inches of a drift of hail in the observer's yard remained at noon of the day following the storm.

From all obtainable reports the hailstorm covered a comparatively small area. The path from west to east, in which direction the storm moved, was about three miles wide and from 20 to 30 miles long. No hail fell more than 2 miles west of Rapid City, and from 20 to 25 miles east, the storm following the Rapid Creek Valley.

The damage done in Rapid City is estimated to be from \$100,000 to \$150,000, aside from the total loss of all the growing crops, fruit, gardens, etc., within the area of the storm. Trees were stripped of their leaves and branches one-half inch in diameter were broken off by the hail. Large numbers of residences suffered broken windows and damaged roofs. Shingles were shattered and composition roofs pounded full of holes. In the downtown district the north windows suffered damage during the first part of the storm, but when the wind veered to the northwest the windows on the east side of the buildings were almost all broken.

The hail smashed virtually all the cluster light globes on the city's street lighting system, the cost of replacement being estimated to be from \$4,000 to \$5,000. Damage to the public school buildings is estimated \$5,000. The Reimer and Glendenning greenhouses are practically a total loss. The five larger churches in the city suffered broken windows and water-soaked furniture. At the School of Mines 150 window panes were broken and the State cement plant suffered about the same loss.

When the storm ended, people all over town pulled out their snow shovels, long since put away, to shovel the ice blanket off the sidewalks. The sun came out bright and hot, and a heavy white mist hung over the ground as the warm air came in contact with the ice pack.

A NOTABLE HAILSTORM ON JULY 5, 1891

[From notes in the daily journal of July 5, 1891, by Wm. Norrington, Observer, Signal Corps]

Thunder at 3:55 p. m. [strato-cumulus] clouds moving from the northwest and southwest. Wind backed from south to north at 5 p. m. Light rain began at 5 p. m., with high winds from the northwest. (Form No. 1015 shows extreme velocity of 64 miles an hour.) Heavy hail from 5:10 p. m. to 5:15 p. m. Hailstones large as medium-sized marbles to irregular masses as large as hen eggs. Ground white. Windows and gas lamps broken. Storm moved to southeast. Rain and hail after 5:30 p. m. Irregular masses of ice one-half inch in diameter. Rain ended 5:45 p. m. Precipitation, 1.33 inches. Temperature fell from the maximum, 87°, to 57° from 4:40 p. m. to 5:40 p. m. Telegraph line grounded. Hailstorm apparently formed northwest from town about 2 miles and moved in a southwest direction, thence down Rapid Creek easterly about 12 miles, then diverged to the right up Spring Creek.

Damages.—At the gas plant every [window pane] was smashed, a number in the Elkhorn railroad depot, many in the center of the city, including thick plate glass. At the School of Mines 150 lights of glass were broken on all sides of the building. All growing grain down Rapid Creek 12 miles and 8 or 10 miles up Spring Creek was destroyed. The prospects in these valleys were very bright for an extraordinary yield of grain previous to the storm; now hardly a vestige of growing grain is left. Hardly a pane of glass is unbroken in the northeast part of town. Several horses were blinded by hail and were shot to relieve their suffering. Sixteen horses killed. Some of the hail 6 inches in diameter.



FIG. 1.—Hail at Rapid City, S. Dak., July 18, 1924. Photograph made 20 or 30 minutes after hail ceased falling, about $2\frac{1}{2}$ inches on ground at that time. All hail in the open disappeared in about three hours



FIG. 2.—Hail at Rapid City, S. Dak., July 18, 1924